

AMENDMENTS TO THE CLAIMS

1. - 4. (Canceled)

5. (Currently Amended) An operation control apparatus for a compressor comprising:

a current detecting unit for detecting current applied to the compressor;

a voltage detecting unit for detecting voltage applied to the compressor;

a storing means for presetting a standard current value for preventing an overcurrent generated when the compressor initially starts, and storing the set standard current value;

a comparing means for comparing the detected current value and the standard current value, and outputting a comparing signal corresponding to the comparing result; and

a control means for cutting off a current applied to the compressor by turning off a current control means installed at the compressor ~~by the comparing result, or for controlling a stroke voltage applied to the compressor by turning on/off the current control means at a certain period,~~when the detected current value is greater than the standard current value, or comparing the stroke value estimated based on the detected voltage value, the detected current value and a motor constant of an interior motor of the compressor with the preset stroke reference value, and then varying a stroke of the compressor on the basis of the comparing result when the detected current value is the same as or smaller than the standard current value,

wherein an OLP (over load protector) and/or a PTC thermistor (positive temperature coefficient thermistor) are not used for the operation control apparatus, and

wherein the control means ~~cuts off a current applied to the compressor by turning off the current control means when the detected current value is greater than the standard current value.~~increases a voltage applied to the compressor by lengthening an on/off period of the current control means when the estimated stroke value is smaller than the stroke reference value, and decreases a voltage applied to the compressor by shortening the on/off period of the current control means when the estimated stroke value is greater than the stroke reference value.

6. (Original) The apparatus of claim 5, wherein the current control means is one of a triac, a gto transistor (gate turn-off transistor), an igbt (insulated gate bipolar transistor), a bipolar transistor and a relay.

7. (Original) The apparatus of claim 5, wherein the compressor is installed at a refrigerator.

8.-10. (Canceled)

11. (Currently Amended) A method for controlling an operation of a compressor comprising:

detecting a current applied to the compressor;

comparing the detected current value and a preset standard current value;

cutting off a current applied to the compressor by turning off a current control means installed at the compressor when the detected current value is greater than the standard current value; and

when the detected current value is the same as or smaller than the standard current value, estimating a stroke of the compressor, and controlling a stroke voltage applied to the compressor by turning on/off the current control means at a certain period on the basis of the estimated value and the preset stroke standard current ~~value-value~~,

wherein the control means increases a voltage applied to the compressor by lengthening an on/off period of the current control means when the estimated stroke value is smaller than the stroke reference value, and decreases a voltage applied to the compressor by shortening the on/off period of the current control means when the estimated stroke value is greater than the stroke reference value.

12. (Currently Amended) An operation control apparatus for a reciprocating compressor without including an Over Load Protector and/or a Positive Temperature Coefficient thermistor, the operation control apparatus comprising:

a voltage detecting unit for detecting applied to an interior motor of the reciprocating compressor when the reciprocating compressor is operated;

a current detecting unit for detecting applied to the interior motor of the reciprocating compressor when the reciprocating compressor is operated;

a stroke estimating unit for estimating a stroke of the compressor on the basis of a voltage value detected from the voltage detecting unit, a current value detected from the current detecting unit, and a motor constant of the interior motor of the reciprocating compressor;

a standard current value storing unit for storing a preset standard current value to cut off an overcurrent generated when the compressor initially starts;

a comparing unit for comparing the current value detected from the current detecting unit and the standard current value previously stored at the standard current value storing unit, and outputting a comparing signal corresponding to the comparing result;

a control unit for generating a cut-off signal ~~for cutting off a current applied to the interior motor of the reciprocating compressor on the basis of the comparing signal, or comparing the estimated stroke value and the stroke reference value, and then generating a control signal on the basis of the comparing result;~~ and outputting the generated cut-off signal to the current control device in the power supply unit when the current value detected from the current detecting unit is greater than the standard current value previously stored at the standard current value storing unit, or generating a control signal and outputs the generated control signal to the current control device in the power supply unit when the current value detected from the current detecting unit is the same as or smaller than the standard current value previously stored at the standard current value storing unit; and

a power supply unit including a current control device, and for cutting off a current or controlling a stroke voltage applied to the interior motor of the reciprocating compressor,

wherein the current control device cuts off a current applied to the interior motor of the reciprocating compressor based on the cut-off signal, and ~~varies a stroke voltage applied to the interior motor of the reciprocating compressor~~ increases a voltage applied to the compressor by lengthening an on/off period of the current control means when the estimated stroke value is smaller than the stroke reference value, and decreases a voltage applied to the compressor by

shortening the on/off period of the current control means when the estimated stroke value is greater than the stroke reference value based on the control signal generated from the control unit.

13. - 14. (Canceled)

15. (Currently Amended) The apparatus of ~~claim 14~~, claim 12, wherein the control unit controls a turn-on period of the current control device in the power supply unit when the current value detected from the current detecting unit is the same as or smaller than the standard current value previously stored at the standard current value storing unit.